

**INDIAN BUREAU OF MINES
MINERALS DEVELOPEMMENT AND REGULATION DIVISION**

MCDR INSPECTION REPORT

Ajmer regional office

Mine file No : RAJ/AJM-315/Pb.Zn-1

Mine code : 34RAJ01001

- (i) Name of the Inspecting : **DJ03**) **DILIP JAIN**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Sri Sandeep Narade, Mine Manager and Sri Vijendra Kas
Official with
Designation
- (iv) Date of Inspection : 01-NOV-19
- (v) Prev.inspection date : 04-MAY-19

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **KAYAR**
- (b) **Registration NO.** : **IBM/421/2011**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Underground
- (e) Postal address :
State : RAJASTHAN
District : AJMER
Village : KAYAR
Taluka : AJMER
Post office : KAYAR
Pin Code : 305023
FAX No. : 0145-6626266
E-mail : Balwant.Rathore@vedanta.co
Phone : 0145-6626232
- (f) Police Station : Gegal
- (g) First opening date : 12-JAN-98
- (h) Weekly day of rest :
2. Address for : M/S Hindustan Zinc Limited
correspondance Kayad Lead -Zinc Mine
Village: Kayad, Dist & Teshil : Ajmer
3. (a) Lease Number : RAJ1765
- (b) Lease area : 480.45
- (c) Period of lease : 50
- (d) Date of Expiry : 27-FEB-48
4. Mineral worked : LEAD & ZINC ORE Main

5. Name and Address of the

Lessee : HINDUSTAN ZINC LTD.
HINDUSTAN ZINC LTD. YASHAD
BHAWAN YASHADGARH, UDAIPUR
UDAIPUR RAJASTHAN
Phone:01483-23331, 23332
FAX :01483-23073

Owner : Sunil Duggal
Hindustan Zinc Limited
Yashad Bhawan, Swaroop
Sagar Udaipur BHILWARA
RAJASTHAN
Phone: 0294-2529182
FAX : 0294-2525765

Agent : Mr. Balwant Singh Rathore
Kayad Lead -Zinc Mine
Village: Kayad Dist &
Teshil : Ajmer AJMER
RAJASTHAN
Phone: 0145-6626231
FAX :

Mining Engineer
Name : Shri Sandeep Narade,Full Time
Qualification : BE mining
Appointment/ : 14-DEC-17
Termination date

Geologist
Name : Syed Zaki Ahmed,Full Time
Qualification : M.Sc.Geology
Appointment/ : 03-MAY-19
Termination date

Geologist
Name : Mr. Gaurav Mathur,Full Time
Qualification : M.Sc(Geology)
Appointment/ : 20-JUL-13 03-MAY-19
Termination date

Manager
Name : Shri Sandeep B. Narade
Qualification : BE Mining
Appointment/ : 14-DEC-17
Termination date

6. Date of approval of Mining Plan/Scheme of Mining : Modif.of approved Mining Plan 05-DEC-06
Modif.of approved Mining Plan 07-MAY-13
MP modif under MCR 1960 20-MAY-16
MP modif under 17(3) MCR 2016 18-OCT-16
MP modif under 17(3) MCR 2016 03-NOV-17
MP modif under 17(3) MCR 2016 06-SEP-19

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	During the previous year i.e 2017-18 a total of 35000 mts of drilling has been proposed.	A total of 46549 mts of drilling has been carried out.	No backlog.
1b	Exploration over lease area for geological axis 1 or 2	During the year a total of 95 BH with 36000 mts of drilling has been proposed.	A total of 90 BH with 45224 mts of drilling has been carried out during the year 2018-19.	Violation of MCDR issued during the previous inspection vide letter dated 21/05/2019.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No proposal for Exploration Agency and Expenditure.	Drilling agency: SOILTECH (INDIA) PVT LTD, Pune. Expenditure of exploration is Rs. 21779803 for UG and Rs. 146167981for Surface.	NIL.
1d	Balance area to be explored to bring Geological axis in 1 or 2	As per approved document dated 03/11/2017, an area of 224.60 ha was under G3 level of exploration.	As per approved document dated 06/09/2019, an area of 209.60 ha was under G3 level of exploration.	Around 15 Ha area has been explored.
1e	Balance reserve as on 01/04/20	As per approved document dated 03/11/2017, the position of reserve and resource as on 01/10/2017 was 7.03 and 2.71 million tonnes respectively.	The position of reserve and resources as on 01/04/2019 as per approved document dated 06/09/2019 was 4.52 and 3.24 million tonnes	NIL.
1f	General remarks of inspecting officers on geology, exploration etc	During the year a total of 95 BH with 29000 mts of drilling has been proposed.	A total of 90 BH with 45224 mts of drilling has been carried out during the year 2018-19. Violation for less drilling has been issued.	Kayad Ore body is lensoidal in shape with pinching and swelling nature.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	A total of 8500 mts of development has been proposed for the year 2018-19.	During the year a total of 9125 mts of development has been carried out.	NIL.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable as mining operation has been proposed through UG Mining Method.	Not applicable.	NIL.
2c	Stripping ratio or ore to OB ratio	Not applicable being a UG mining operation.	Not applicable.	NIL.
2d	Quantity of topsoil generation in m3	50000 Cum Top Soil has been proposed to generate from waste excavation Pit.	The proposed pit is not excavated hence there is no top soil generation during the year 2018-19. However, 200CuM of top soil has been generated through excavation of garland drain.	NIL.
2e	Quantity of overburden generation in m3	A total of 400000 tonnes of waste has been proposed to generate through UG development.	A total of 326159 tonnes of waste has been generated during the year 2018-19.	NIL.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Development has been proposed through UG mining method.	The UG mechanised method has been adopted for carrying out mining operations in the lease area which is best suited to the type of deposit.	NIL.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Not applicable as production of Ore is being proposed through UG Mining operation.	No pit has been developed. Production of ore is being carried out through UG mining operations.	NIL.

3b	Quantity of ROM mineral production proposed	1200000MT	1199592MT	NIL.
3c	Recovery of sailable/usable mineral from ROM production	1200000MT	1199592MT	NIL.
3d	Quantity of mineral reject generation	No proposal of Mineral Reject generation.	No mineral Reject has been generated.	Whole ROM dispatch to Rampura-Agucha Mine.
3e	Grade of mineral rejects generation and threshold value declared.	Not applicable as no proposal.	Not applicable as no generation.	NIL.
3f	Quantity of sub grade mineral generation.	No proposal of Sub-grade generation.	Not applicable.	NIL.
3g	Grade of sub grade mineral generation	No proposal of Sub-grade generation.	Not applicable as no sub-grade generation.	NIL.
3h	Manual / Mechanised method adopted for segregating from ROM	No proposal of segregation as entire ROM is subject to beneficiation.	ROM is being beneficiated at Rampura-Agucha Mine of M/s HZL.	NIL.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal of beneficiation study.	Not applicable as no proposal.	NIL.
3j	Provision of drilling and blasting in mineral benches	Drilling pattern for development in ore and rock-Burn Cut method. Drilling pattern in Stopes- Ring drilling with parallel hole drilling. No proposal in bench as UG mine.	Drilling and blasting has been carried out as per proposal in UG development and stopes.	NIL.

3k	Provision of mining machineries in mineral benches	Twin Boom Jumbo, Loaders, LPDT, LHD, Grader etc. has been proposed for mine development and stoping operation.	Deployment of Mining machinery has been found to be as per proposal in UG operations.	NIL.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Not applicable being a UG mining operation.	Not applicable.	NIL.
3m	Total area covered under excavation/pits	Not applicable being a UG mining operation. However, an area of 0.73 Ha area has been mentioned under mining.	An area of 0.73 ha is utilized under mining for UG mine entry (portal).	NIL.
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable being a UG mining operation.	Not applicable.	NIL.
3o	Total area put in use under different heads at the end of year	As per approved document dated 06/09/2019, an area of 48.50 ha has been proposed to put in use under different heads at the end of year 2020-21.	As per annual return for the year 2018-19, area put in use under different heads at the end of year 2018-19 was 48.50 ha.	NIL.
3p	Production of ROM mineral during the last five year period as applicable	2014-15: 800000 2015-16: 1000000 2016-17: 1000000 2017-18: 1200000 2018-19: 1200000	2014-15: 372000 2015-16: 760100 2016-17: 1000000 2017-18: 1200000 2018-19: 1199592	All figures in metric tonnes.

3q	General remarks of inspecting officers on method of mining etc.	Underground method of mining has been proposed.	The Method of mining is suitable to the type of deposit.	NIL.
----	---	---	--	------

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Top soil-01, OB-NIL, Mineral Reject-NIL and Waste dump-01.	Mineral Reject and OB dumping is NIL for the year 2018-19. Temporary waste dumping at marked place.	200CuM of top soil has been generated through excavation of garland drain and utilized.
4b	Location of topsoil, OB and mineral reject dumps	Top soil: 1350-1440 E and 9840-1000N, Waste duming : 1403-1557E and 10222-10389N.	Top soil generationed has been utilized. Temporary waste dumping observed at marked place.	NIL.
4c	Number of dumps within lease area and outside of lease area	Inside lease: 01 and Outside Lease area: NIL.	Inside lease: 01 and Outside Lease area: NIL.	NIL.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable as it is a underground mine.	Not applicable.	NIL.
4e	Number of active and alive dumps.	One temporary Waste Dump.	One temporary Waste Dump.	NIL.
4f	Number of dead dumps.	No proposal.	Not applicable.	NIL.
4g	Number of dumps established.	No proposal.	Not applicable.	NIL.
4h	Whether Retaining wall or garland drain all along dumps are there.	No proposal for the year 2018-19.	Retaining wall and garland drain observed.	NIL.
4i	Length of Retaining wall or garland drain all along dumps	No proposal for the year 2018-19.	Not applicable.	NIL.
4j	Number of settling ponds	No proposal for the year 2018-19.	Not applicable.	NIL.
4k	Specific comments of inspecting officer on waste dump management	Proposal of waste dumping and top soil has been envisaged.	Waste generated during the year has been utilized for backfilling of UG stoped out area.	No issue related to waste dumping.

Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Backfilling or in stope dumping of the waste has been proposed.	Backfilling of stopes is being carried out after full extraction of the mineral.	NIL.
5b	Area under backfilling of mined out area	1222mx15mx25m (LxBxD) for the year 2018-19.	1539mx15mx25m (LxBxD) for the year 2018-19.	The actual area is more than the proposal because it includes backlog of the previous year.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	50000 Cum Top Soil from proposed waste excavation Pit.	The proposed pit is not excavated hence there is no top soil generation from proposed pit during the year 2018-19. However, 200CuM of top soil has been generated through excavation of garland drain and utilized.	NIL.
5d	Total area fully reclaimed and rehabilitated	No proposal of full reclamation and or rehabilitation	Not applicable as it is underground (UG) Mine.	NIL.
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Backfilling or in stope waste dumping in UG voids has been proposed after full extraction of mineral.	Backfilling of stopes is being carried out after full extraction of the mineral.	Being a UG mine, UG stoped out area is utilized for waste dumping/backfilling.

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	As per rule 26(2) of MCDR, 2017, PMCP report to be submitted for previous year by 1st July.	Annual PMCP report for reporting year i.e. 2018-19 has been submitted on 10/10/2019.	NIL.
6b	Area available for rehabilitation (ha) .	An area of 3.0 Ha has been proposed for rehabilitation	An area of 3.0 Ha has been rehabilitated.	NIL.

6c	afforestation done (ha).	3.0 Ha Area.	3.0 Ha Area.	NIL.
6d	No. of saplings planted during the year	1500 numbers.	Inside lease area 3600 number and 1700 number outside of lease area.	NIL.
6e	Cumulative no .of plants	No specific proposal about cumulative number of plants.	Upto the year 2018-19, cumulative number of plants are 32600.	NIL.
6f	Any other method of rehabilitation	Other than plantation, no specific proposal of any other method of rehabilitation	Plantation has been carried out as per proposal.	NIL.
6g	Cost incurred on watch and care during the year	No specific proposal on cost of watch and care during the year.	As reported, approximately Rs. 5.40 lacs.	NIL.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (L x B x D	For the year 2018-19, voids available for backfilling was 825000 MT (Eqv.1222mx15mx25m).	During the year void available for backfilling was 1038856 MT (Eqv.1539mx15mx25m).	Additional quantity of 213856 MT was backlog of the year 2017-18.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	825000 MT	1038856 MT (Additional area backfilled to clear the backlog of last year).	For backfilling the 326159 MT of waste generated during the year 2018-19 has been used and remaining quantity brought from Rampura-Agucha Mine and other venders.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	No Proposal.	Not applicable as the backfilling has been carried out in UG stoped out area.	NIL.

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No applicable.	Not applicable as the voides were of UG stopes.	NIL.
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No Proposal.	Not applicable.	NIL.
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	1500 saplings has been propsoed to plant.	Inside lease area 3600 number and 1700 number outside of lease area.	NIL.
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	An area of 3.0 Ha has been proposed for rehabilitation .	An area of 3.0 Ha has been rehabilitated.	NIL.
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Plantation.	Plantation.	NIL.
6p	Compliance of environmental monitoring (core zone and buffer zone)	Air, Noise, vibration and water quality testing to be done quarterly in proposed location.	Testing is being done as per proposal.	NIL.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	A total of 1500 number sapling has been proposed to plant.	Inside lease area 3600 number of sapligs and 1700 number of saplings outside of lease area has been planted.	The lessee is working as per the proposal. PMCP compliance appears to be satisfactory.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
--------	------	-----------	-------------	---------

7a	ROM Mineral dispatch or grade-wise sorting within lease area	Entire ROM proposed to dispatch for further processing at Rampura-agucha Mine.	Entire ROM dispatched for further processing to Rampura Agucha Mine	NIL.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Not applicable as no grade wise sorting has been proposed.	Not applicable.	NIL.
7c	Different grade of mineral sorted out at mines.	No proposal.	Not applicable.	NIL.
7d	Any beneficiation process at mines .	No beneficiation of process at mine.	Not applicable.	NIL.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No specific proposal.	No issues related to mineral conservation and beneficiation.	NIL.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	A quantity of 50000 CuM Top Soil has been proposed to generate from waste excavation Pit.	The proposed pit is not excavated hence there is no top soil generation from proposed pit during the year 2018-19. However, 200CuM of top soil has been generated through excavation of garland drain and utilized.	NIL.
8b	Concurrent use or storage of topsoil	A quantity of 50000 CuM Top Soil has been proposed to generate from waste excavation Pit.	No top soil has been generated as proposed waste pit has not been excavated.	200CuM of top soil has been generated through excavation of garland drain and utilized.

8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Waste Dump-1 Reject Dump- Nil	One temporary waste dump in lease area. Reject-NIL	NIL.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Backfilling or in stope dumping of the waste has been proposed.	Dumping of waste has been carried out in UG stops.	NIL.
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal of reclamation and rehabilitation of waste dumps etc.	Not applicable as no proposal.	NIL.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	During the reporting year a total of 1500 numbers of saplings has been proposed to plant.	A total of 5300 numbers of saplings have been planted. Inside lease: 3600 no. Outside lease: 1700 no.	Cumulative: -32600 at the end of 2018-19.
8g	Survival rate	No specific proposal of for survival rate.	90% inside lease area and 75% outside of lease area.	As per AR 2018-19.
8h	Water sprinkling on roads to control airborne dust	To control the air born dust particle, water sprinkling has been proposed over the roads.	Water sprinkling on roads, Tarpaulin cover on mine truck (dispatched) has been observed.	NIL.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	During the reporting year a total of 1500 numbers of saplings has been proposed to plant.	A total of 5300 numbers of saplings have been planted.	The aesthetic beauty in and around the mine is satisfactory.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
--------	------	-----------	-------------	---------

9a	Status of submission of Monthly and Annual returns	As per rule 45 of MCDR, monthly and annual returns to be submitted.	Monthly and annual returns have been submitted for reporting year.	NIL.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Information on Geologist, Mining Engineer and Manager has been furnished.	Mine Manger, Mining engineer and Geologist are appointed.	NIL.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Current o/c working: NIL, Dumps-1.0 Ha, Roads, Plants, Buildings, Township- 3.64 Ha, Other Plantation- 43.86, Total area: 48.50 Ha	Information furnished in respect of the land use pattern appears to be corrected.	NIL.
9d	Scrutiny of Annual return on afforestation	Within ML 3600 and outside ML 1700 numbers of saplings.	Information furnished in respect of the afforestation is correct.	NIL.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Mineral Reject quantity furnished is NIL.	Mineral Reject has not been generated.	NIL.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM Closing stock at Mine head- 599 MT.	The information furnished is found to be in order.	NIL.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex. Mine Price: Rs 1552 per tonne & Cost of Production: Rs. 4872 per tonne.	Information furnished appears to be corrected.	NIL.
9h	Scrutiny of Annual return on fixed assets	Value of fixed asset furnished is Rs. 2848476717/-	The value of fixed asset furnished appears to be in order.	NIL.

9k	Scrutiny of Annual return on mining machineries	Rock Drill, Blast Hole Drill, LPDT, LHD, Air Compressor, Pumps, Ventilation fan etc.	The information furnished on mining machineries appears to be in order.	NIL.
----	---	--	---	------

Details of violations observed during current inspection and compliance position of violation pointed out

Violation observed		Show couse position	
Rule NO.	Issued on Compliance on	Rule NO.	Issued on Compliance on

Date :

(DILIP JAIN)

Indian Bureau of Mines